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CURRENT LITERATURE.

Last volume of a great work.¹

The task of collecting and issuing in uniform manner all the specific descriptions of fungi ever published, although requiring prodigious labor, has been accomplished by the author of the *Sylloge Fungorum* in a remarkably short time, and the final volume now lies before us. The ten volumes of the work contain about forty thousand species. How many of these names are synonyms is the part of the monographer and special student to determine. Excellent judgment has been shown throughout in the compilation, and the work will not only be a monument to the perseverance of the author, but of inestimable and lasting service to mycologists.

The present volume does not differ essentially in its make up from the preceding, except in possessing a universal index to the cohorts, families, genera and their synonyms of the full ten volumes. The series closes most appropriately with an enumeration of fossil fungi, embracing 331 numbers, compiled by Dr. A. Meschinelli.

Although this is the last volume of the work as projected, Dr. Saccardo offers to issue addenda, if authors will kindly continue to send him their publications. He states that at the time this last volume came from the press (June, 1892,) some fifteen hundred species, *incredibile dictu*, had already come in, too late to be included. Such evidence of activity in the collection and study of fungi indicates how highly serviceable such addenda must be to all working botanists.

The flora of the Dakota group.²

This invaluable contribution to the fossil flora of North America was the last work of Leo Lesquereux, who died in the fall of 1889. It is composed of a vast number of leaf-drawings, identified and named by the deceased author, and portrays the forests that once existed in this country. At the same time it shows the broad range of this scientist's work, whose childhood was spent among rocks, trees and flowers in the heart of Switzerland. From these early influences Lesquereux naturally turned in time to the study of botany, to which he devoted the greater part of his life. In the year 1848 he came to

¹SACCARDO, P. A.—*Sylloge fungorum omnium hucusque cognitorum*. Vol. x, supplementum universale; Pars II, Discomycetæ—Hyphomycetæ, additi sunt fungi fossiles auctore Doct. A. Meschinelli. Roy. 8 vo, pp. 964. Patavii, 1892.—Francs 48.

²LEO LESQUEREUX.—*The flora of the Dakota group*, a posthumous work, edited by F. H. Knowlton, U. S., Geol. Survey. 256 pp., 66 plates. Washington, 1891.

America to become our foremost paleobotanist. His great enthusiasm soon made him familiar with our flora, and we need only to look at the work he has left us to get an idea of his talent and indomitable energy. His last, as well as his previous works are well fitted to stimulate our paleobotanists. As it will be impossible to give a complete review of this voluminous work, we point out a few of its characteristic features, as shown in the original way, by the author himself.

How full of interest, for instance, are the figured leaves of *Liriodendron*, illustrating the transition to ancestors with deeply lobed or even pinnatifid leaves, sometimes of gigantic size, but with the characteristic truncate apex, until another form appears with the terminal lobe preserved as in *L. semialatum*. The comparison of these very different types might seem hazardous, did the carefully drawn figures not show a striking accordance. We note one exception only: the nervation of the leaf (plate xxix, fig. 3) appears somewhat different from a true *Liriodendron*. Comparing the genus *Sassafras*, we find a large, five-lobed leaf with margin entire (*S. dissectum*), while *S. cretaeum* var. *grossidentatum* and *S. papillosum* show similarly lobed leaves, but with dentate margins. These last forms seem, however, hardly to belong to the genus *Sassafras*; the leaf figured on plate vi, fig. 7, agrees in most respects with a leaf of a *Platanus*, closely related to *P. occidentalis*. We wonder also why the author did not consider the leaves of *Sassafras dissectum* and of *S. subintegrifolium* (plate xiv, figs 1 and 2) as one species, since these two forms are easily recognized in our recent *S. officinale*. We find, too, a number of leaves of Heer's *Betulites* united into one species by Lesquereux, who gives in the text a most valuable account of the variation of leaves on this tree, and calls attention to the fact, that if these leaves had been found separately, at different times and in different localities, they might have been referred to a number of species.

There is, altogether, in this work — not only in the text, but also in the numerous illustrations — abundant material for further studies. Besides describing and enumerating the species of the Dakota group, as far as it is known at the present time, including ferns, cycads, conifers and phanerogams to the number of 460 species, the author gives an analysis of the entire flora. A general sketch of this highly interesting flora is given with critical notes upon the types occurring there, for instance of *Liriodendron*, *Sassafras*, *Quercus*, *Ficus* and many others. The study of these plants has led to the conclusion "that the flora of North America is not at the present epoch, and has not been in past geological times, composed of foreign elements brought to this continent by migration, but that it is indigenous; its types are native,

and the diversity of their representatives has been produced by physical influences. The affinities, therefore, or the relation of their modification or derived forms can not be looked for in the vegetation of distant countries."

As the work is left by the author, although unfinished, it commends itself, and the author's name will always be remembered with admiration and gratitude. But we are unable to leave his work without a few remarks about the manner in which it has been edited.

In looking through this book, we are surprised at the number of errors, apparently of carelessness, such as mis-spelling, incorrect citations, omission of figures, misleading terms, etc. The editor seems not to have understood the responsibility of editing a posthumous work. The best method of editing a posthumous work is, undoubtedly, to carry it out in the same spirit in which it was started, taking all facts into consideration. It must not be forgotten that Lesquereux was an old man, who, in the later years of his life, became unable to keep informed as to recent publications, and that his views in some respects belonged to past times. Then, too, there are many things that are admissible in a manuscript, written as the thought first comes to us, and pleasing for the time to the fancy, which should be omitted in print. We dare say, that in its present form, this work would never have been published by the author. The reader will readily observe the wide gap between the genial and elegant work of Lesquereux, and the lack of care and taste in the present edition.

Although it is as unpleasant a task to criticise a posthumous work as it is delicate to edit it, we must note some of the deficiencies in the edition. The plates, which form the most important part, and which should have been a guide to further studies, are poorly arranged. The genera ought to have been so placed as not to require one to look over a large number of plates, widely separated from each other, to find the species of each genus. This is the case, for instance, with *Protophyllum*, *Ficus*, *Sassafras* and most of the large genera. It would have been an easy matter to arrange them in good order. Several of the figures are designated by numbers so distant from the respective illustrations that it is hard to tell to which figure the numbers belong. Some of the illustrations are not named at all, and others are not numbered. The spelling of names is inconsistent in a great many instances: we have both *grossi*- and *grosse-dentatum*, *cissioides* and *cissoides*, besides numerous others. Often the specific name is of the wrong gender as: *Fagus orbiculatum*, *Sassafras primiginea*, *S. artica*, *S. Pfaffiana*, etc. The descriptive part contains some misleading phrases; e. g.: "dots like the impression of basilar points of hairs"

(p. 98), "a bunch of small pediceled seeds like those of *Carex*" (p. 62). Furthermore there is a too indiscriminate use of terms: e. g., basal, basilar and basil—the last of which is the name of a plant, but is written in the manuscript as an abbreviation of basilar. In the descriptions of the nervation it is a difficult task to understand the terminology. From *Protophyllum denticulatum* (p. 193) we cite the following: "median nerve," "lateral primaries supra-basilar," "secondaries with their divisions," and finally, "nervilles!" The nerves figure under several names: veinlets, nervilles, etc., which are not technically correct. On page 92 we learn that "the nerves are attached to each other." Again it is remarkable that such an expression could escape the editor's attention as this from p. 243: "*Diospyros Virginiana* being the only species remaining in the present North American flora." Such mistakes might easily have been corrected, but we are sorry to say that these and many others have been allowed to pass by the editor whose duty it would seem to have been to correct them.

We regret that this valuable work of Lesquereux has not met with a more satisfactory treatment as to correctness and form. The spirit and skill of the author has failed to find in the editor due appreciation and sufficient painstaking for so important a work.—TH. HOLM.

The Minnesota Catalogue.

IN THE PRESENT confusion of ideas with regard to the larger groupings of plants it is as well, perhaps, for authors of local lists as well as more extended manuals to try to express our present knowledge of plant affinities. Such an attempt is now before us in Professor Conway MacMillan's introduction to "the Metaspermæ of the Minnesota valley." This introduction, reprinted in advance, is intended to be a statement of the principles and classification to be followed in the forthcoming enumeration. The principles enunciated are those familiar to all who consider the subject of nomenclature, which is now in a fair way to be so happily settled. We much regret that so sprightly a young author should see fit to include in this part of his very readable pages any insinuations as to unworthy motives governing those who are counted as conservatives in this matter. Differences of opinion there must always be, but courtesy demands that a man shall be taken to be honest in any public expression of his views. As to the proposed groupings: two great divisions are used, Protophyta and Metaphyta, based upon the absence and presence of sexuality. Metaphyta are further subdivided into Gamophyta and Sporophyta, dependent upon the development or not of a distinct sporophyte. Sporophyta are then subdivided into Thallophyta, Archegoniataë, and Metaspermæ, whose names practically describe their limitations, the last named including

angiosperms. In grouping the Metaspermæ Treub's conclusions from the study of Casuarina are accepted, and the groups Chalazagameæ and Porogameæ adopted, dependent upon the absence or presence of a micropylar canal. The Porogameæ contain monocotyledons and dicotyledons; the latter being further subdivided into Archichlamydeæ and Metachlamydeæ, the former being a combination of Polypetaleæ and Apetalæ, the latter the Gamopetalæ.

Special attention is called to the definitions of Metaspermæ and Archispermæ (Gymnospermæ), which includes our knowledge of the difference in the origin of the so-called "endosperm" in the two cases and the still somewhat obscure notions as to the sexual origin of the angiospermous "endosperm." Our present knowledge and theory with reference to these very important but very recondite distinctions are well and compactly put, but we may be pardoned the question whether the language is not too severely technical to be addressed "not to any coterie of *savants* in some special line of science, but to the general public of Minnesota." Professor MacMillan has undertaken a very interesting piece of work, and with a vigor of style and freedom from restraint that will surely bring useful results.

Minor Notices.

DR. N. L. BRITTON has published a synoptical list, including synonymy, range, and descriptions of new species and varieties of the species of *Scirpus* and *Rhynchospora* occurring in North America.¹ Of *Scirpus* 36 species are enumerated, including the new *S. Peckii* of N. Y. and Conn. *Rhynchospora* presents sixty species, sixteen of which are Mexican, West Indian, and South American.

DR. TRELEASE has long been studying our *Yuccas*, a sort of heritage from Dr. Engelmann, intensified by his own interest in all that relates to pollination. The story of *Yucca*, told by Dr. Engelmann, Professor Riley, and Dr. Trelease, is a part of the pyrotechnics of our science, so wonderful that seeing is almost necessary to believing. Dr. Trelease had intended to give to the public a summary of the whole subject, together with the results of his recent studies both in the Botanical Garden and in the native haunts of *Yucca*, but Professor Riley has undertaken the work from the standpoint of *Pronuba*. We have left, however, in the reprint before us², a synoptical list of our

¹BRITTON, N. L.—A list of the species of the genera *Scirpus* and *Rhynchospora* occurring in North America. Contrib. Herb. Columbia Coll. no. 26. Reprinted from Trans. N. Y. Acad. Sci. XI, pp. 74-94.

²TRELEASE, WILLIAM.—Detail illustrations of *Yucca* and description of *Agave Engelmanni*. From the 3d Ann. Rep. of the Mo. Bot. Garden, pp. 159-168 with 25 full page plates. Issued May 28, 1892.

Yuccas and illustrations of thirteen of the species. Eleven plates are devoted to the display of such characters as enter into the delimitation of species, while twelve reproductions of photographs show finely the facies of the different species. A new Agave, *A. Engelmanni*, is also described and figured.

OPEN LETTERS.

Who are biologists?

Botanists will feel grateful to Prof. MacMillan for his vigorous protests against the present unfortunate attitude assumed by zoologists in regard to the position of botany as one of the biological sciences. This question is one which vexes us here as well as elsewhere, but since my connection with the University we have been insisting upon a recognition—by our students at least—of the place in biological studies to which botany is entitled, and I am glad to say that there is a disposition among some of the best of our zoologists here, to grant what we claim in this respect. The question is an important one in many ways, and it has occurred to me more than once, that it would be a proper one for action by the Botanical Club in the first instance, and then, if possible, by the Biological Section of the A. A. A. S. Certainly the botanists of the United States and Canada are a sufficiently numerous body to make any serious representations from them of value. Were action taken by them in this case, and their position firmly maintained, I think it would have considerable weight in settling once for all what is a most unnecessary annoyance and injustice to an important profession.

The Madison meeting is to be an important one. At it will be gathered, it is hoped, not only all our own best men, but a number of representative men from abroad. There could be no more fitting opportunity to bring this question forward and have it freely discussed, and the present is none too early to suggest such a movement.—D. P. PENHALLOW, *McGill University, Montreal.*

Variations of the strawberry leaf.

The article of Mrs. Kellerman in the August number of the GAZETTE suggests the following: In May, 1889, I noticed upon specimens of *Fragaria* which were brought into the laboratory, additional fourth and fifth leaflets upon the petiole below the normal leaflets. Turning to Bentham and Hooker, *Genera Plantarum*, under *Fragaria*, I found "*Folia alterna, 3-foliata, rarissime foliolis paucis lateralibus adjectis pinnata v. 1 v. 5-foliata.*" I determined to search for more examples with a view of ascertaining whether the variation was rare or common in this locality.

In June of the same year, while collecting with half-a-dozen students in the vicinity of Willmette, we all so frequently found the leaves bearing the additional leaflets that we concluded that they could be spoken of as "not uncommon in this locality." October 20, 1890, I found them plentiful at the side of the railroad north of the Ridge viaduct